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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/478,370	02/16/00	HAMA K	7363.0010

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FINNEGAN HENDERSON FARABOW
GARRETT & DUNNER LLP
1300 I STREET N W
WASHINGTON DC 20005-3315

EXAMINER	
ALEJANDRO MULERO,L	
ART UNIT	**PAPER NUMBER**
1763	9

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/478,370	Applicant(s) HAMA ET AL.	
	Examiner Luz L. Alejandro	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-164* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-164* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. *08/357,423* .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☒ Notice of Informal Patent Application (PTO-152)
20) ☐ Other: .

DETAILED ACTION

Reissue Applications

This reissue application was filed without the required offer to surrender the original patent or, if the original is lost or inaccessible, an affidavit or declaration to that effect. The original patent, or an affidavit or declaration as to loss or inaccessibility of the original patent, must be received before this reissue application can be allowed. See 37 CFR 1.178.

The reissue oath/declaration filed with this application is defective (see 37 CFR 1.175 and MPEP § 1414) because of the following: the oath or declaration must state that the person signing has reviewed and understands the contents of the specification, including the claims, as amended by any amendment specifically referred to in the oath or declaration as required by 37 CFR 1.63(b)(1).

Claims 1-164 are rejected as being based upon a defective reissue declaration under 35 U.S.C. 251 as set forth above. See 37 CFR 1.175.

The nature of the defect(s) in the declaration is set forth in the discussion above in this Office action.

Claims 17-164 are rejected under 35 U.S.C. 251 as being an improper recapture of broadened claimed subject matter surrendered in the application for the patent upon which the present reissue is based. See *Hester Industries, Inc.* v. *Stein, Inc.*, 142 F.3d 1472, 46 USPQ2d 1641 (Fed. Cir. 1998); *In re Clement,* 131 F.3d 1464, 45 USPQ2d

1161 (Fed. Cir. 1997); *Ball Corp.* v. *United States*, 729 F.2d 1429, 1436, 221 USPQ 289, 295 (Fed. Cir. 1984). A broadening aspect is present in the reissue which was not present in the application for patent. The record of the application for the patent shows that the broadening aspect (in the reissue) relates to subject matter that applicant previously surrendered during the prosecution of the application. Accordingly, the narrow scope of the claims in the patent was not an error within the meaning of 35 U.S.C. 251, and the broader scope surrendered in the application for the patent cannot be recaptured by the filing of the present reissue application.

The prosecution history for 08/624,102, now US 5,792,261, objectively demonstrates a surrender of subject matter in the form of a coil. At p. 5 of the April 30, 1996 Amendment in 08/624,102, the applicants urged (emphasis added):

> The new claims describe in more detail a number of the advantages of the present invention. In particular, the conductive container which has an auxiliary chamber provides a shield for preventing the electromagnetic field produced by the **coil** from leaking outside and disturbing the surrounding devices. Also, the pressure controller allows the window plate to be thinner. These features are now claimed in Claim 22, the only independent claim remaining in the application. In view of this, Applicants submit that the claims now are in condition for allowance.

In the January 8, 1998 Amendment, the applicants responded to the Examiner's rejection with arguments that their invention as claimed was distinguishable over the prior art. The applicants mentioned the coil feature at p. 4, lines 14 and 20, as well as at p. 6, lines 5 and 8. In US 5,792,261, moreover, the patent itself discussed the coils

found in the prior art at col. 1, lines 14-52, and added at col. 1, lines 55-58 (emphasis added):

> The object of the present invention is therefore to increase or enhance the uniformity of process applied to a face of the substrate by the plasma process apparatus in which the RF induction **coil** is used.

Taken as a whole, therefore, the prosecution history is found to show a surrender of the subject matter of a coil. The applicants repeatedly asserted that their claimed invention, which included a coil along with other features, was distinguishable over the prior art. Argument -- even without amendment to the claims -- in the original application may be sufficient to establish surrender. See Hester Indus., Inc. vs. Stein, Inc., 142 F.3d 1472, 1482, 46 USPQ2d 1641, 1649 (Fed. Cir. 1998), as discussed at MPEP 1412.02.

Since the coil subject matter was surrendered during prosecution, the attempt to remove that limitation in claims 17-164 of this Reissue, and thus broaden those claims as to that feature, constitutes impermissible recapture. See In re Clement, 131 F.3d 1464, 1468, 1469, 45 USPQ2d 1161, 1164 (Fed. Cir. 1997), as discussed at MPEP 1412.02.

Claim Objections

Claim 1 is objected to because of the following informalities: at line 7, "a main pump exhaust" should read "a main exhaust pump" for a better understanding of the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> **The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.**

Claim 155 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 155 recites the limitation "said work table" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> **A person shall be entitled to a patent unless –**
>
> **(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.**

Claims 85-87,92-93, 99, 120-121, 128-129 and 135-136 are rejected under 35 U.S.C. 102(e) as being anticipated by Cuomo et al., U.S. Patent 5,280,154.

Cuomo et al. shows the invention as claimed including an apparatus 10 for processing a process region of a substrate 40, using a plasma, the apparatus comprises: a container substantially formed of a conductive material (see col. 4, lines 3-5); a window partition plate 26 supported on an inner surface of the container, made of dielectric, and defining an air-tight process container portion 12 and an air-tight auxiliary

container portion 48,50, (see col. 4, lines 5-9); a work table 36 arranged in the process container portion and having a support face facing the window plate, the substrate being mountable on the support face with the process region facing the window plate (see figure 1); a main supply 30 for supplying a process gas between the window plate and the substrate mounted on the support face, at least part of the process gas being transformable into the plasma (see col. 4, lines 9-11); an antenna 14 for generating an electromagnetic field between the window plate and the substrate mounted on the support face to induce generation of the plasma arranged in the auxiliary container portion and facing the window plate (see figure 1); a power supply 60 for applying a high frequency voltage to the antenna; and valves for controlling the admission of the gas into the chamber and valves and exhaust pumps for purging the gas form the chamber and for drawing a vacuum inside the chamber (see col. 3, lines 22-24, and col. 4, lines 9-18). It is inherent that the above mentioned valves and pumps are pressure controllers that are used for controlling the pressure in the process container at a predetermined or desired value (also see col. 5, lines 13-16). Also, it would be inherent that since the pressure in the process container can be controlled to a desired pressure, a pressure difference between the pressure in the process container and the pressure in the auxiliary container can be controlled to be lower or higher or the same as a predetermined value.

Cuomo et al. apparatus further comprises grounding means for grounding said container (see col. 4, lines 60-64); a lower electrode arranged in the work table and a power supply for applying a high frequency potential to the lower electrode (see figure 1

and col. 4, lines 32-35); and the apparatus can be used as a plasma depositing apparatus (see col. 8, lines 15-17).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 88-89, 119, 122 and 164 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cuomo et al., U.S. Patent 5,280,154 in view of Benzing et al., U.S. Patent 5,346,578.

Cuomo et al. is applied as above but lacks anticipation of showing a cooler, for controlling the temperature of the antenna, having a coolant flow passage. Benzing et al. disclose a plasma apparatus in which cooling means 440, 442, 444, 446 are used to cooled the antenna (see figure 5 and col. 5, lines 17-23). In view of this disclosure it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus disclose by Cuomo et al. as to further comprise

cooling means for cooling the antenna as to maintain the temperature of the antenna within a desired value.

The claimed thickness of the dielectric window, claims 119 and 164, is considered to involve routine optimization while has been held to be within the level of ordinary skill in the art. Therefore, one of ordinary skilled in the art at the time the invention was made would have modified the apparatus of the Cuomo et al. reference, by using a dielectric window having a thickness of approximately 30 mm- 50 mm in order to optimize the apparatus.

Claims 90 and 126 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cuomo et al., U.S. Patent 5,280,154 in view of Ogle, U.S. Patent 4,948,458.

Cuomo et al. is applied as above but lacks anticipation of showing a seat which supports the antenna. Ogle disclose a plasma apparatus in which an antenna 20 is supported by port 14 (see figures 1-2, and col. 5, lines 41-42). In view of this disclosure it would have been obvious to one having ordinary skill in the art at the time the invention was made to further comprise a seat on the dielectric plate as to arranged and support the antenna on it.

Claims 94-98 and 130-134 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cuomo et al., U.S. Patent 5,280,154 in view of Itoh, U.S. Patent 4,817,558.

Cuomo et al. is applied supra but lacks anticipation of showing the claimed first and second gas supply members for supplying first and second gases, respectively. Itoh disclose an apparatus wherein different process gases are introduced into the processing chamber through two different gas introduction ports (a first gas supply port 5b and a second gas supply port 5a) for independently controlling the introduction of each gas to the processing chamber and the flow rate of each gas (see figure 1, col. 3, lines 58-66, and col. 5, lines 12-18 and 32-39). In view of this disclosure, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of the Cuomo et al. reference, as to comprise first and second gas introduction ports, as taught by the Itoh reference, as to independently control the introduction of the gases to the chamber and their respective flow rates. The Examiner takes official notice that gas supply ports made of a dielectric material are known and used in the art.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-164 are rejected under the judicially created doctrine of double patenting over claims 1-22 of U. S. Patent No. 5,525,159 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: an apparatus for processing a process region of a substrate, using a plasma comprising: an air-tight process chamber and an air-tight auxiliary chamber; a window plate made of dielectric; an exhaust for exhausting and setting the process chamber to a vacuum; a work table in the process chamber and having a support face opposed to the window plate, the substrate being mounted on the support face of the work table, with the process region facing the window plate; a main supply for supplying a process gas between the window plate and the substrate mounted on the support face, at least part of the process gas being transformed into plasma; an induction electrode for generating electromagnetic field between the window plate and the substrate mounted on the support face of the work table to induce generation of the plasma, and including a coil arranged in the auxiliary chamber and facing the window plate; a power supply section for applying high frequency voltages to the coil; and a pressure controller for keeping a pressure difference between pressures in the process and auxiliary chambers at a value.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of

the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Allowable Subject Matter

Claims 1-16 would be allowable if the rejection under 35 U.S.C. 251 (defective reissue declaration) set forth in this Office action is overcome.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luz L. Alejandro whose telephone number is 703-305-4545. The examiner can normally be reached on Monday-Thursday from 8:30 to 6:00. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills, can be reached on (703) 308-1633. The fax phone number for the organization where this application or proceeding is assigned is 703-305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

LLAM

November 27, 2000